

Docket No. 2003-050-TAP

**CLAIMS:**

What is claimed is:

- 1    1.    A system for mitigating an effect of an inoperable  
2    servo reader on a tape drive, comprising:  
3        a read and write head assembly, said read and write  
4    head assembly including a plurality of servo read  
5    elements, wherein at least one servo read element of said  
6    plurality of servo read elements is inoperable;  
7        a tape, said tape including a plurality of servo  
8    tracks; and  
9        a track following servo system, said track following  
10   servo system coupled to said plurality of servo read  
11   elements, and operable to:  
12        collect tape distortion information associated with  
13   said tape;  
14        derive a track following offset value associated  
15   with said tape distortion information; and  
16        position at least one operable servo read element of  
17   said plurality of servo read elements proximal to at  
18   least one servo track of said plurality of servo tracks  
19   and with said track following offset value applied.
- 1    2.    The system of Claim 1, wherein said plurality of  
2    servo read elements comprises two servo read elements.
- 1    3.    The system of Claim 1, wherein said tape distortion  
2    information comprises a value  $N$ , and said track following  
3    offset value comprises  $N/2$ .

Docket No. 2003-050-TAP

1 4. The system of Claim 1, wherein said tape distortion  
2 information comprises position error signal (PES) data.

1 5. The system of Claim 1, wherein said tape distortion  
2 information comprises position error signal (PES) data  
3 from at least one servo track of said plurality of servo  
4 tracks.

1 6. The system of Claim 1, wherein said tape distortion  
2 information comprises position error signal (PES) data  
3 from separate servo readers of said plurality of servo  
4 readers to produce a composite PES value.

1 7. The system of Claim 1, further comprising at least a  
2 second read and write head assembly, said second read and  
3 write head assembly including a second plurality of servo  
4 read elements, wherein said second read and write head  
5 assembly is operable to collect said tape distortion  
6 information associated with said tape.

1 8. The system of Claim 1, wherein said plurality of  
2 servo read elements comprises a plurality of bumps, and  
3 one bump of said plurality of bumps includes said at  
4 least one inoperable servo read element.

1 9. The system of Claim 1, wherein at least one servo  
2 track of said plurality of servo tracks comprises at  
3 least one of a magnetic track and an optical track.

Docket No. 2003-050-TAP

- 1 10. A method for mitigating an effect of an inoperable  
2 servo reader on a tape drive, the method comprising the  
3 steps of:  
4       collecting tape distortion information associated  
5 with a tape;  
6       deriving a track following offset value associated  
7 with said tape distortion information; and  
8       positioning at least one operable servo read element  
9 of a plurality of servo read elements proximal to at  
10 least one servo track of a plurality of servo tracks and  
11 with said track following offset value applied.
- 1 11. The method of Claim 10, wherein said plurality of  
2 servo read elements comprises two servo read elements.
- 1 12. The method of Claim 10, wherein said tape distortion  
2 information comprises a value N, and said track following  
3 offset value comprises  $N/2$ .
- 1 13. The method of Claim 10, wherein said tape distortion  
2 information comprises position error signal (PES) data.
- 1 14. The method of Claim 10, wherein said tape distortion  
2 information comprises position error signal (PES) data  
3 from at least one servo track of said plurality of servo  
4 tracks.
- 1 15. The method of Claim 10, wherein said tape distortion  
2 information comprises position error signal (PES) data

Docket No. 2003-050-TAP

3 from separate servo readers of said plurality of servo  
4 readers to produce a composite PES value.

1 16. A computer program product in a computer readable  
2 medium for use in a data processing system, for  
3 mitigating an effect of an inoperable servo reader on a  
4 tape drive, the computer program product comprising:  
5 instructions for collecting tape distortion  
6 information associated with a tape;  
7 instructions for deriving a track following offset  
8 value associated with said tape distortion information;  
9 and  
10 instructions for positioning at least one operable  
11 servo read element of a plurality of servo read elements  
12 proximal to at least one servo track of a plurality of  
13 servo tracks and with said track following offset value  
14 applied.

1 17. The computer program product of Claim 16, wherein  
2 said plurality of servo read elements comprises two servo  
3 read elements.

1 18. The computer program product of Claim 16, wherein  
2 said tape distortion information comprises a value N, and  
3 said track following offset value comprises  $N/2$ .

1 19. The computer program product of Claim 16, wherein  
2 said tape distortion information comprises position error  
3 signal (PES) data.

Docket No. 2003-050-TAP

- 1 20. The computer program product of Claim 16, wherein
- 2 said tape distortion information comprises position error
- 3 signal (PES) data from at least one servo track of said
- 4 plurality of servo tracks.